Installation Checklist and Quick Start Guide

BCM50 3.0
Business Communications Manager

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NORTEL

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Chapter 1
Getting started

IMPORTANT!

Print this chapter to record the progress of the BCM50 system installation and configuration. Use the tables and checklists to guide you through the installation process.

About this guide

The *Installation Checklist and Quick Start Guide* describes how to install and configure Business Communications Manager 50 (BCM50) systems running BCM50 3.0 software.

Purpose

The procedures described in this guide relate to the BCM50 hardware. This guide provides task-based information about installing the hardware components and performing basic configuration tasks. For more detailed configuration information, see the appropriate technical documentation.

Audience

This guide is directed to experienced installers responsible for installing and configuring BCM50 systems.

For more information about installing and configuring a BCM50 system, see the *Installation and Maintenance Guide*.

Precautions

Nortel recommends that you read this entire document before starting the described procedures.

Observe the general safety precautions against personal injury and equipment damage outlined in the Regional Installation Safety Manual (ISM) at all times.

Before starting the procedures presented in this document, arrange all materials, tools, and test equipment at the work location to minimize fatigue and inconvenience.

The value next to the clock icon indicates the average time that it takes to complete the procedure.

Installation and configuration summary

The table Installation and configuration checklist on page 8 provides the tasks to install and configure a BCM50 system.

Table 1 Installation and configuration checklist (Sheet 1 of 2)

☑		Task	Reference	Comments
	5 min	Review the BCM50 system hardware and configuration tools.	System overview on page 13	
	2 min	Verify that you have the tools, materials, and data required.	Tools and system information on page 10	
	15 min	Complete the checklists before installing the BCM50 system.	Checklists on page 11	
	12 min	Install the BCM50 main unit: • Rack-mount • Wall-mount • Desk-mount	Main unit and expansion unit installation on page 17	
	4 min	(Optional) Install MBMs in the BCM50 expansion unit.	Media bay module installation on page 23	
	9 min	(Optional) Install the BCM50 expansion unit: • Rack-mount • Wall-mount • Desk-mount	Expansion unit installation on page 25	
	3 min	Apply power to the BCM50 system.	Power-supply connection on page 26	
	1 min	Connect the telephony connector.	Telephony connector on page 26	
	15 min	Connect the MBM wiring.	MBM wiring on page 30	
	5 min	Connect the BCM50 system to the LAN.	BCM50 main unit LAN connection on page 33	
	5 min	Determine DHCP server configuration and IP address (use default or change).	DHCP server configuration and IP address on page 33	
	2 min	(Optional) Connect the BCM50 system to the WAN. Only available with BCM50a, BCM50e, BCM50ba, and BCM50be	WAN connection on page 35	
	9 min	Install telephony hardware.	Telephone installation on page 36	
	15 min	Download Element Manager.	BCM Web page downloads on page 38	
	1 min	(Optional) Download the Startup Profile template.	BCM Web page downloads on page 38	

Table 1 Installation and configuration checklist (Sheet 2 of 2)

☑		Task	Reference	Comments
	10 min	Apply the keycode.	Software keycode on page 39	
	15 min	Configure the required BCM50 system parameters (Element Manager or Startup Profile).	System parameters on page 39	
	1 min	Configure the MBMs with Element Manager.	MBM configuration on page 44	
	N/A	(Optional) Complete the configuration by customizing other parameters.	Additional parameters on page 45	
Note: The stated times vary depending on the number and type of items installed.				

Default values

Use the table Default IP addresses on page 9 and the table Default user names and passwords on page 9 to view and record changes to the default BCM50 system information.

Table 2 Default IP addresses

Port	IP address (subnet mask)	New IP address
OAM port (see Note)	10.10.11.1 (255.255.255.252)	
BCM50 or BCM50b LAN (no router)	192.168.1.2 (255.255.255.0)	
Router LAN (BCM50a, BCM50e, BCM50ba, or BCM50be)	192.168.1.1 (255.255.255.0)	
Note: DHCP is enabled on the OAM port and assigns the following IP address: **10.10.11.2**		

Table 3 Default user names and passwords

Tool	User ID I User name	Password	New password
Element Manager	nnadmin	PlsChgMe!	
BCM50 Web page (http:// *[IP address]*)	nnadmin	PlsChgMe!	
Telset Administration (F9*8 and F**Config)	SETNNA (738662)	CONFIG (266344)	
Telset Administration voice mail (Feature 983)	SETNNA (738662)	CONFIG (266344)	
Telset Administration initialize voice mail (Feature 983)	–	CONFIG (266344)	
Router	–	setup	

Tools and system information

Use the table Tools on page 10 and the table System information on page 10 to record values and comments about tools and system information.

Table 4 Tools

Description	Value	Comments
Laptop (or PC) with: • Windows 2000, Windows XP, or Windows Vista • minimum 256 MB, recommended 512 MB • 150 MB free disk space		
Mounting hardware rack-mount brackets, wall-mount bracket, or rubber feet; an optional plywood backboard 3/4 in. (2 cm) thick for wall-mount installations		
Phillips #2 screwdriver		
Common screwdriver		
Pliers		
Antistatic ground strap		
Connecting tool		
25-pair cable with RJ-21 connector		
Cat 5 Ethernet cable with RJ-45 connectors		
Surge protector		

Table 5 System information (Sheet 1 of 2)

Description	Value	Comments
System name		
Date and Time (NTP/Trunk/Manual)		
Time zone		
Initial IP address and netmask for each network interface		
Default next-hop router (default gateway)		
DHCP server		
DNS domain name		
Primary (and optional secondary) DNS servers IP		
Profile/region		
Telephony Startup template (DID/PBX)		
Start DN		
WAN link protocol		

Table 5 System information (Sheet 2 of 2)

Description	Value	Comments
Fractional T1 channel numbers		
Frame relay DLCI/CIR (if applicable)		
V.90 modem settings (North America only)		
SNMP agent (security, version)		
SNMP manager IP address		
SNMP community string		

Checklists

Before installing the BCM50 hardware, complete the following checklists. For more information, see the *Installation and Maintenance Guide*.

General checklist

5 minutes

- ☐ Determine the location for the main unit (and optional expansion unit), telephones, and other equipment based on spacing and electrical requirements.
- ☐ Order the required trunks from the central office.
- ☐ Ensure that you have all the equipment and supplies you need to install the system.
- ☐ Ensure that the system complies with the environmental requirements.
- ☐ Ensure that the system complies with the electrical requirements.
- ☐ Ensure that the system complies with the site telephony-wiring requirements.

Main unit components checklist

5 minutes

Check that you have the following components, and inspect the components for any damage:

- ☐ one main unit (either BCM50, BCM50a, BCM50e, BCM50b, BCM50ba, or BCM50be)
- ☐ one power supply
- ☐ one power-supply cable
- ☐ one power-supply retention clip
- ☐ four rubber feet
- ☐ one screw to secure the RJ-21 telephony connector
- ☐ one cable tie
- ☐ a documentation CD
- ☐ *Installation Checklist and Quick Start Guide*

Expansion unit and media bay modules components checklist (optional)

5 minutes

Check that you have the following components, and inspect the components for any damage:

- ☐ one expansion unit
- ☐ one expansion unit power supply
- ☐ one power-supply cable
- ☐ one expansion cable (shielded Ethernet cable)
- ☐ one power-supply retention clip
- ☐ four rubber feet
- ☐ the correct media bay modules (MBM)

Chapter 2
System overview

You require the following hardware components and configuration tools to install and configure your BCM50 system:

- Main units on page 13
- Expansion units and media bay modules on page 15
- Additional hardware on page 15
- Nortel Business Element Manager on page 16
- Startup Profile on page 16

For more information, see the chapter "Introducing the BCM50 hardware" in the *Installation and Maintenance Guide*.

Main units

The main hardware component in the BCM50 system is the main unit. The six BCM50 main units are divided into two series: standard and BRI. The BRI (or b) main units include BRI ports instead of the four analog lines (on the RJ-21 telephony connector) on the standard main units.

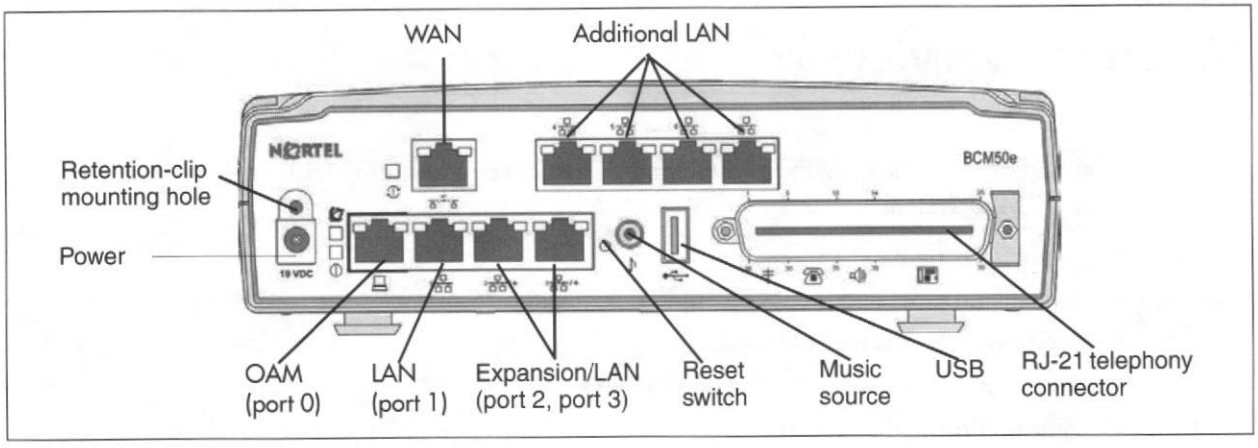
Standard main units

The table Standard main units descriptions on page 13 describes the standard main units, and the figure Standard main unit (BCM50e shown) ports and connectors on page 14 shows a standard main unit. The other standard main units have similar ports and connectors.

Table 6 Standard main units descriptions

Standard main units	Description
BCM50 main unit (with telephony only)	The BCM50 main unit provides call-processing and simple data networking functions. It provides connections for 12 digital telephones, 4 (PSTN) lines, 4 analog station ports, and 4 connections for auxiliary equipment (auxiliary ringer, page relay, page output, and music source). The BCM50 main unit does not include a router, but it includes 4 LAN ports: one is the OAM port for technicians, and the other three are for basic LAN connectivity.
BCM50a main unit (with ADSL router)	The BCM50a main unit provides all the same core functionality as the BCM50 main unit and an integrated ADSL router for advanced data applications. For detailed configuration information, see the *BCM50a Integrated Router Configuration Guide.*
BCM50e main unit (with Ethernet router)	The BCM50e main unit provides all the same core functionality as the BCM50 main unit and an integrated Ethernet router for advanced data applications. For detailed configuration information, see the *BCM50e Integrated Router Configuration Guide.*

Figure 1 Standard main unit (BCM50e shown) ports and connectors



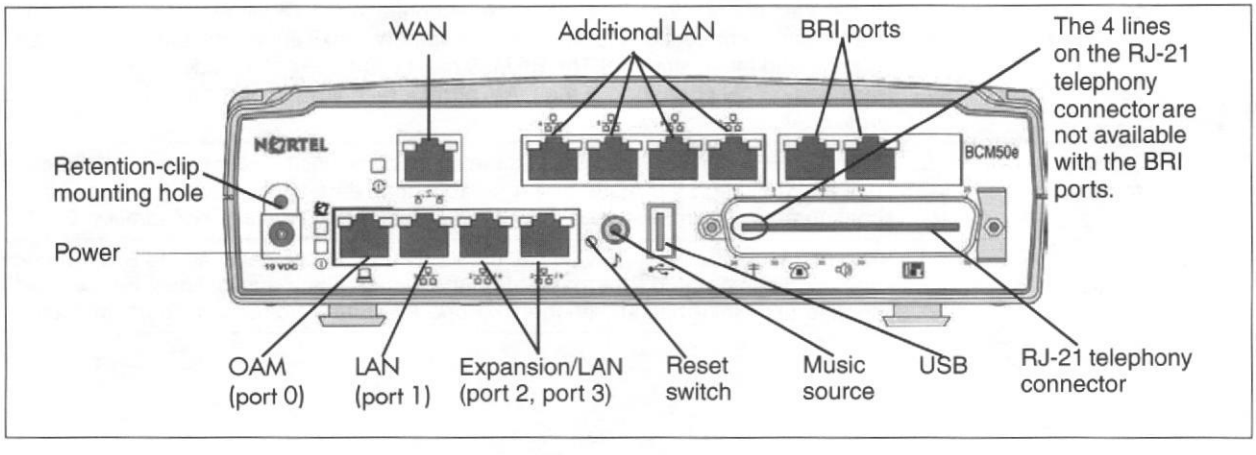
BRI main units

The table BRI main units descriptions on page 14 describes the standard main units, and the figure BRI main unit (BCM50be shown) ports and connectors on page 14 shows a BRI main unit. The other BRI main units have similar ports and connectors.

Table 7 BRI main units descriptions

BRI main units	Description
BCM50b main unit (with Telephony only)	The BCM50b main unit provides similar functionality to the BCM50 main unit. The difference is that the BCM50b main unit has two integrated BRI ports that replace the four analog lines on the RJ-21 telephony connector.
BCM50ba main unit (with ADSL router)	The BCM50ba main unit provides similar functionality to the BCM50a main unit. The difference is that the BCM50ba main unit has two integrated BRI ports that replace the four analog lines on the RJ-21 telephony connector.
BCM50be main unit (with Ethernet router)	The BCM50be main unit provides similar functionality to the BCM50e main unit. The difference is that the BCM50be main unit has two integrated BRI ports that replace the four analog lines on the RJ-21 telephony connector.

Figure 2 BRI main unit (BCM50be shown) ports and connectors



Expansion units and media bay modules

The BCM50 system includes up to two expansion units. The expansion unit is designed to accommodate one media bay module (MBM) to connect additional telephony equipment to the system. The MBMs connect with external devices to implement various trunks and stations.

The table Trunk, station, and combination MBMs on page 15 lists the trunk MBMs and station MBMs that are supported in the expansion units.

Table 8 Trunk, station, and combination MBMs

Trunk MBMs	Station MBMs	Combination MBMs
ADID4/ADID8	ASM8/ASM8+	4x16
BRIM	DSM16/DSM16+/DSM32/DSM32+	G4x16/G8x16
DTM	GASM	
GATM4/GATM8		

Additional hardware

In addition to the main unit, expansion unit, and MBMs, the BCM50 system includes the additional hardware listed in the table BCM50 hardware descriptions on page 15.

Table 9 BCM50 hardware descriptions (Sheet 1 of 2)

Hardware	Description
Rack-mount shelf	A shelf designed for mounting up to four BCM50 units (main unit and expansion unit) into a standard 19-inch equipment rack. An optional patch field, which provides RJ-45 connectors for all main unit trunk and station interfaces, is available.
Wall-mount bracket	A bracket designed for mounting a BCM50 unit (main unit or expansion unit) to a wall. An optional wiring-field card (WFC), which provides RJ-45 connectors for all main unit trunk and station interfaces, is available with the wall-mount bracket.
Patch panel	The patch panel simplifies the connections of lines and extensions to the main unit. The patch panel installs into the rack-mount shelf in a standard equipment rack and connects to the telephony connector.
Wiring-field card (WFC)	The WFC simplifies the connections of lines and extensions to the main unit. The WFC installs into the cable-management tray of the wall-mount bracket and connects to the telephony connector through a 50-pin header.
Power supply	The power supply is an external device that connects to the BCM50 units (main unit and expansion unit). You must have one power supply for each unit in your BCM50 system. A power supply is included with each main unit and expansion unit.
Power-supply adapter cord	The power-supply adapter cord is for international (non-North American) BCM50 users. It connects to the power supply on one end and to the (C-14) BCM50 power bar on the other end. You require one power-supply adapter cord for each power supply you want to connect to the power bar.
Single power supply mounting bracket	The single power supply mounting bracket accommodates a single power supply for wall-mount installations.

Table 9 BCM50 hardware descriptions (Sheet 2 of 2)

Hardware	Description
Power supply mounting enclosure	The power supply mounting enclosure packages up to three power supplies in one enclosed case. You can neatly mount multiple power supplies with no excess cables. You can install the power supply mounting enclosure in the same way as you install a main unit or expansion unit.
Uninterruptable power supply (UPS) (if applicable)	An uninterruptable power supply (UPS) is an optional device that maintains continuous operation during power interruption or failure conditions. The UPS provides power-source monitoring and battery-backup activation so that critical BCM50 functionality is maintained. BCM50 supports American Power Conversion (APC) UPS devices that use a USB control interface. The UPS control software configures various operational settings.
USB hub (if applicable)	The USB port on the UPS uses a different communication speed than the USB port on the main unit. Due to this difference, you must use a USB hub to connect the UPS data connection to the main unit. The USB hub also provides additional USB ports.

Nortel Business Element Manager

The primary management application for configuring and administering the BCM50 system is Nortel Business Element Manager. Element Manager is a client-based management application that runs on a Windows computer. With Element Manager, you can connect to the BCM50 system devices over an IP network and configure, administer, and monitor BCM50 system devices.

You can use the latest Element Manager version to manage all previous BCM systems that use Element Manager. You need only one instance of Element Manager on your computer.

The Element Manager requirements are:

- Windows: Windows 2000, Windows XP, Windows Vista
- RAM: minimum 256 MB, recommended 512 MB
- free space: 150 MB

Element Manager access is also supported through a Citrix server.

Startup Profile

You can use the Startup Profile to customize a template with common BCM50 system parameters. Then you can use this template to easily configure a single system or multiple systems.

You create the Startup Profile using the Startup Profile template (a Microsoft Excel template), and then use a USB storage device to transfer the Startup Profile data to the BCM50 main unit.

Loading the Startup Profile adds about 5 minutes to the time for the BCM50 system to boot.

To use the Startup Profile template, you need:

- a computer with a USB port
- Microsoft Excel 2000 or later
- the Nortel BCM50 Startup Profile template (Microsoft Excel template)
- a portable USB storage device compatible with USB 1.1 (formatted for FAT32)

Chapter 3
Hardware installation

See the following procedures to install the BCM50 hardware:

- Main unit and expansion unit installation on page 17
- Media bay module installation on page 23
- Expansion unit installation on page 25
- Power-supply connection on page 26
- Telephony connector on page 26
- BRI integrated ports (BCM50b, BCM50ba, and BCM50be) on page 28
- MBM wiring on page 30
- BCM50 main unit LAN connection on page 33
- DHCP server configuration and IP address on page 33
- WAN connection on page 35
- Telephone installation on page 36

Main unit and expansion unit installation

You typically install the main unit and expansion units in the same manner. Make sure you install the expansion units close enough to the main unit so you can connect the supplied 5 m (16 ft) expansion cable between the expansion unit and main unit.

Nortel provides three methods of installing the BCM50 units:

- rack-mount
- wall-mount
- desktop-mount

Caution: To keep the BCM50 system operating at the optimal internal temperature, keep the top, sides, and rear clear of obstructions and away from the exhaust of other equipment.

Do not place any objects, except other BCM50 units, on top of a main unit.

For more information, see the chapter "Installing the main unit" in the *Installation and Maintenance Guide*.

Rack-mount installation

To install a BCM50 unit (main unit or expansion unit) in an equipment rack, you need the optional rack-mount kit (NT9T6325). This kit provides the parts to mount up to four BCM50 units in a standard 19-inch equipment rack.

Use the following procedures to install a BCM50 unit in a rack:

- To install the rack-mount shelf in an equipment rack on page 18
- To install a BCM50 unit on the rack-mount shelf on page 18

To install the rack-mount shelf in an equipment rack

5 minutes

1 Determine the location in the rack where you want to install the BCM50 unit.

2 Position the rack-mount shelf in the rack.

3 Align the holes in the rack-mount shelf with the holes in the equipment rack rails.

4 Fasten the rack-mount shelf to the rack using the four rack screws (supplied with the rack-mount kit).

To install a BCM50 unit on the rack-mount shelf

7 minutes

1 Place the BCM50 unit on the rack so that the feet of the unit fit in the depressions in the shelf.

2 Move the unit forward until the feet touch the front side of the depressions.

3 Slide the unit back until the feet click in place on the slots in the depressions. See the figure Attach the units to the rack-mount shelf on page 18.

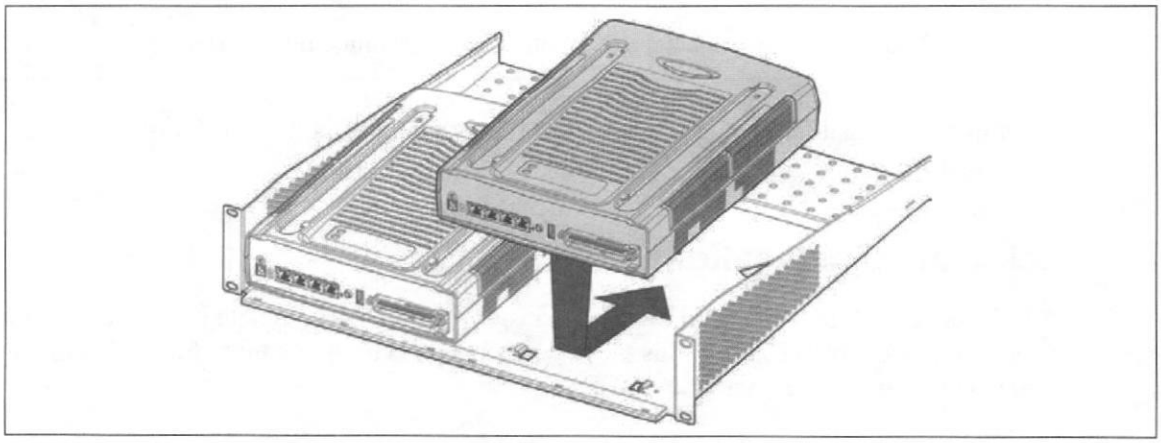
4 If you want to further secure the unit, use the four self-tapping screws (for plastic) supplied with the rack-mount kit to attach the unit to the rack-mount shelf.

   a Align the screw holes in the unit with the holes in the rack-mount shelf.

   b Insert the four screws through the holes in the bottom of the shelf and into the screw holes in the bottom of the unit.

Caution: Use only the screws supplied with the rack-mount kit (NT9T6325). Do not replace the screws. Other screws can damage the unit.

Figure 3 Attach the units to the rack-mount shelf



5 Install the power supply using a method appropriate for your installation. For details about installation options, see Installing the BCM50 power supply on page 22.

To install a BCM50 unit on top of another unit

2 minutes

Warning: For safety reasons, do not stack more than one unit on top of a first BCM50 unit.

1 Insert the power-supply retention clip into the BCM50 unit.

2 Place the BCM50 unit on top of the first unit. Make sure the feet of the second unit are in front of the slots on the top of the first unit.

3 Slide the unit back until it clicks in place on the slots.

4 Install the power supply using a method appropriate for your installation. For details about installation options, see Installing the BCM50 power supply on page 22.

To install the patch panel (optional)

2 minutes

1 Determine the location in the rack where you want to install the patch panel.

2 Position the patch panel in the rack.

3 Align the holes in the patch panel with the holes in the equipment rack rails.

4 Fasten the patch panel to the rack using the four rack screws (supplied with the patch panel).

Wall-mount installation

To install a BCM50 unit (main unit or expansion unit) on a wall, you need a wall-mount bracket for each unit. Each wall-mount bracket includes a cable-management tray to store and organize the cables connected to the BCM50 units. An optional wiring-field card simplifies the cable connections for the lines and extensions.

Caution: BCM50 units must be installed side-by-side on a wall. DO NOT attempt to install units on top of each other when using the wall-mount option.

Use the following procedures to install a BCM50 unit on a wall:

- To install the BCM50 wall-mount bracket on page 20
- To install a BCM50 unit on the wall-mount bracket on page 21

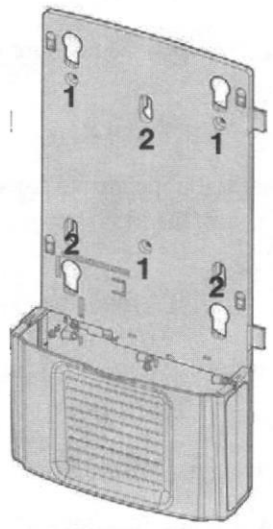
To install the BCM50 wall-mount bracket

6 minutes

1 **Optional:** Mount a plywood backboard securely to the wall. Use a ruler and a level to level the plywood backboard.

2 Place the wall-mount bracket on the backboard or wall, and mark the location of the center keyhole-shaped screw hole on the plywood backboard. See the figure Wall-mount bracket on page 20.

Figure 4 Wall-mount bracket



Note: When using three screws, Nortel recommends installing the screws in the three holes labeled 1 or the three holes labeled 2.

3 Install one #8 x 2 cm (#8 x 0.75 in.) round-head wood screw in the backboard.
Do not tighten the screw head against the backboard. Leave approximately 0.5 cm (0.25 in.) of the screw exposed from the backboard.

4 Prepare the wall-mount bracket by removing the alignment tabs:

- If this is the only unit in the BCM50 system, remove the alignment tabs on the right side of the wall-mount bracket.
- If this is the last unit on a BCM50 system with multiple units, remove the alignment tabs on the left side of the wall-mount bracket.

5 Hang the wall-mount bracket on the mounting screw.

6 Install two #8 x 2 cm (#8 x 0.75 in.) round-head wood screws into the screw holes in the wall-mount bracket. See the figure Wall-mount bracket on page 20.

7 Tighten the three wood screws against the wall-mount bracket.

8 Install two #8 x 2 cm (#8 x 0.75 in.) round-head wood screws into the screw holes in the cable trough.

9 Repeat steps 2 to 8 for each additional unit.

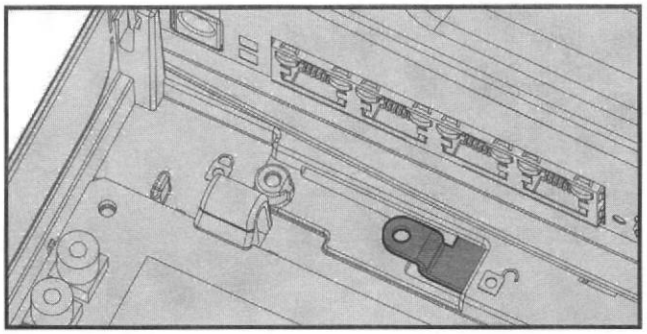
To install a BCM50 unit on the wall-mount bracket

6 minutes

1 Insert the power-supply retention clip into the BCM50 unit.

2 Slide the wall-mount lock fully to the right (unlock position). See the figure Wall-mount lock in unlock position on page 21.

Figure 5 Wall-mount lock in unlock position



3 Align the feet on the BCM50 unit with the four holes in the wall-mount bracket.

4 Press the unit against the wall-mount bracket and slide the unit down until it clicks in place.

5 Slide the wall-mount lock to the left (lock position).

6 Use the supplied screw to secure the wall-mount lock in position.

7 Repeat steps 1 to 6 to install additional BCM50 units.

8 Install the power supply using a method appropriate for your installation. For details about installation options, see Installing the BCM50 power supply on page 22.

Wiring-field card installation (optional)

You install the optional wiring-field card (WFC) in the cable-management tray of the main unit.

To install the WFC

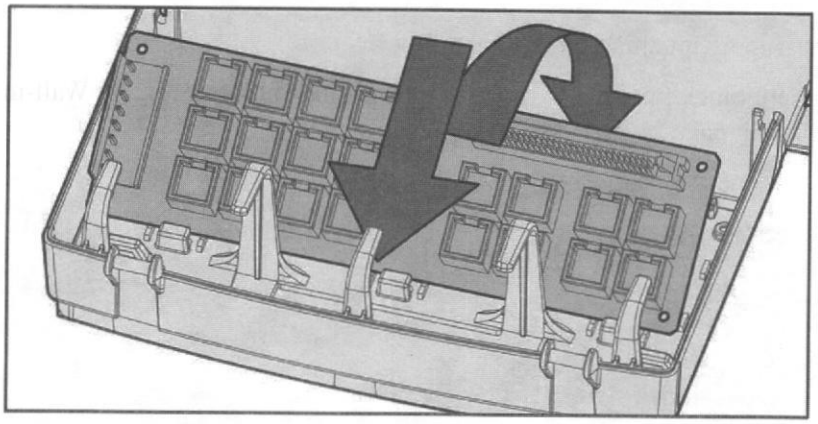
2 minutes

1 Clear the WFC installation area of all cables.

2 Place the WFC in the installation area with the 50-pin header/cable connector at the top.

3 Slide the WFC down until it is at the bottom of the installation area and held in place by the three clips. See the figure Slide in the WFC on page 22.

Figure 6 Slide in the WFC



4 Press the WFC firmly at the top-left corner, center, and right tabs. The WFC snaps into place.

5 **Optional:** Install the three screws to secure the WFC in place.

Desktop-mount installation

Follow this procedure to install a BCM unit (main unit or expansion unit) on a desktop or other flat surface.

To install a BCM50 unit on a desktop or flat surface 4 minutes

1 Insert the power-supply retention clip into the BCM50 unit.

2 Attach the four self-adhesive rubber feet to the bottom of the BCM50 unit by peeling off the paper backing and placing the feet on the unit.

3 Position the BCM50 unit on a table or shelf. Make sure you leave enough space around the unit for ventilation and access to the cables.

4 If the BCM50 system requires additional units, install the other units on top of, or beside, the existing BCM50 unit.

- To install the additional units beside the existing unit, repeat steps 1 to 3 for each unit.
- To install the additional units on top of the existing unit, refer to To install a BCM50 unit on top of another unit on page 19.

5 Install the power supply using a method appropriate for your installation. For details about installation options, see Installing the BCM50 power supply on page 22.

Installing the BCM50 power supply

There are several different ways to install a power supply. Select the method that works best for your type of installation. The power supply must be within 1.5 m (5 feet) of the BCM50 unit and within 1.5 m (5 feet) of the AC power outlet (wall outlet or UPS).

To install the power supply on the rack-mount shelf 2 minutes

1 Place the power supply behind the BCM50 units on the back of the rack-mount shelf.

Make sure the power supply is on its side with the label facing the back of the shelf.

2 Use two cable ties to secure the power supply to the rack-mount shelf.

3 Repeat steps 1 and 2 for each power supply you mount.

To install the power supply on the desktop 1 minutes

1 Place the power supply next to the BCM50 unit on the desktop. The power supply must be within 1.5 m (5 feet) of the BCM50 unit and within 1.5 m (5 feet) of the AC power outlet (wall outlet or UPS).

To install a power supply using the power supply mounting enclosure 2 minutes

1 Slide the BCM50 power supplies into the power supply mounting enclosure.

2 Mount the power supply mounting enclosure in the same manner as your other BCM50 units (in a rack, on a wall, or on a desktop).

For more detailed installation instructions for the power supply mounting enclosure, see the *Nortel BCM50 Power Supply Mounting Enclosure* (N0118043).

To install a power supply using the single power supply mounting bracket 4 minutes

1 If you want to install one power supply only, use the single power supply mounting bracket.

2 Attach the single power supply mounting bracket on the wall next to your BCM50 system.

3 Snap the power supply into the power supply mounting bracket.

For more detailed installation instructions for the power supply mounting bracket, see the *Nortel BCM50 Single Power Supply Mounting Bracket* (N0130867).

Media bay module installation

Install a media bay module (MBM) in the expansion unit, and then install the expansion unit in the same manner as the main unit. The MBM dip switches must remain in their default factory position. You can use Element Manager to make any required modifications to the MBM settings.

For more information, see the chapter "Installing an expansion unit" in the *Installation and Maintenance Guide*.

To verify the MBM switches

2 minutes

1 Verify that the 6-pin dip switch is set to on for all MBMs that have the 6-pin dip switch.

2 To install a global analog trunk module (GATM):

   a For the dip switches on the left side, at the rear of the module, set all the switches to on.

   b For the dip switches on the right side, at the rear of the module (country profile switches), set all the switches to off. The GATM automatically downloads the country profiles.

3 To install a global analog station module 8 (GASM8):

   a For the dip switches on the left side, at the rear of the module, set all the switches to on.

   b For the dip switches on the right side, at the rear of the module, set the switches according to the table GASM8 dip switch settings (switches 1–3) on page 24 and the table GASM8 regional dip switch settings (switches 4–8) on page 24.

Table 10 GASM8 dip switch settings (switches 1–3)

Switch	Description	Setting
Switch 1	Firmware download capability	OFF—Standard mode (firmware downloading not supported) ON—Enhanced mode (firmware downloading supported)
Switch 2	To download the firmware from the BCM50 (for enhanced mode only)	OFF—if you want the GASM8 to download the firmware when the firmware version in the BCM50 is different than the version in the GASM8 (default) ON—if you want the GASM8 to download the firmware in the event of a BCM50 cold start
Switch 3	Enable/disable echo cancellation	OFF—Enables echo cancellation (default) ON—Disables echo cancellation

Table 11 GASM8 regional dip switch settings (switches 4–8)

Switches 4 to 8 select the region for the GASM8 as follows:					
	Switch 4	**Switch 5**	**Switch 6**	**Switch 7**	**Switch 8**
North America	OFF	OFF	OFF	OFF	OFF
United Kingdom	OFF	OFF	OFF	OFF	ON
Australia	OFF	OFF	OFF	ON	OFF
Poland	OFF	OFF	OFF	ON	ON
Note: When switch 1 is ON (enhanced mode), an available regional profile will be downloaded and override the regional dip switch settings.					

To install an MBM in an expansion unit

2 minutes

1 Attach one end of a grounding strap to your wrist and the other end to a grounded metal surface.

2 With the face of the MBM toward you, insert the MBM into the expansion unit.

3 Push the MBM completely into the expansion unit. You hear a click when the MBM is firmly seated in the expansion unit.

The MBM must be configured for it to function. For information about configuring an MBM, see To configure the MBMs on page 44.

Expansion unit installation

After installing an MBM in the expansion unit, install one or two expansion units in the same manner as the main unit (in a rack, on a wall, or on a flat surface).

For more information, see the chapter "Installing an expansion unit" in the *Installation and Maintenance Guide*.

To install an expansion unit

9 minutes

1 Mount the expansion unit the same way as the main unit. Refer to Main unit and expansion unit installation on page 17.

2 Locate the expansion cable that was supplied with the expansion unit.
If you do not have the expansion cable, you can use a shielded category 5e-compliant Ethernet cable (maximum length of 10 m).

3 Plug one end of the expansion cable into the expansion port on the expansion unit.

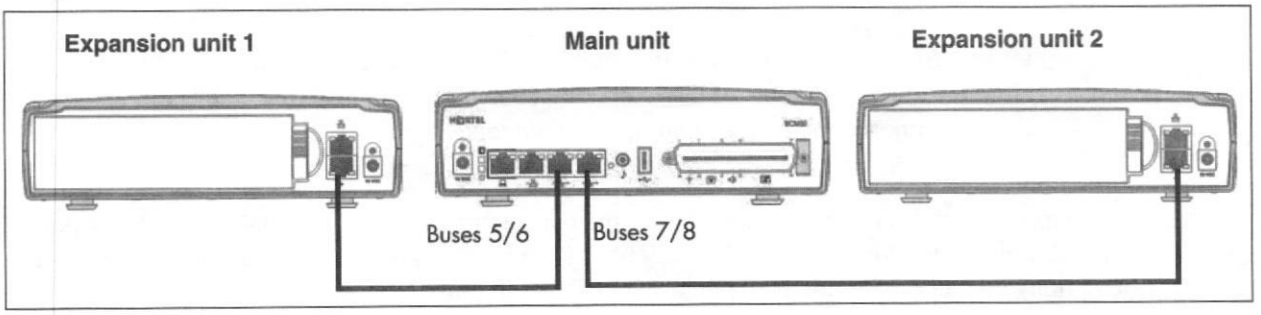
4 Do one of the following:

- **To connect the first expansion unit**: Plug the other end of the expansion cable into expansion/LAN port 2 on the main unit. This expansion unit is now designated as Expansion 1 in Element Manager.
- **To connect the second expansion unit**: Plug the other end of the expansion cable into expansion/LAN port 3 on the main unit. This expansion unit is now designated as Expansion 2 in Element Manager.

  Refer to the figure How to connect expansion units to a main unit on page 25.

Note: When you plug an expansion unit into the correct port on the main unit, the LEDs on the expansion unit port are on, while the LEDs on the main unit port stay off.

Figure 7 How to connect expansion units to a main unit



Power-supply connection

Use the power supply and power-supply cable supplied with each BCM50 unit.

Connect the power supply to your BCM50 system by one of the following methods:

- To connect the power supply without a UPS on page 26
- "To connect the power supply using a UPS" – refer to the *Installation and Maintenance Guide*.

For more information, see the chapter "Connecting the cables to the BCM50 system" in the *Installation and Maintenance Guide*.

To connect the power supply without a UPS

3 minutes

1. Rotate the retention clip so the power outlet is open.
2. Plug the BCM50 power-supply cord into the BCM50 unit.
3. Rotate the retention clip so that it locks the power-supply cord in place.
4. Plug one end of the power-supply cable into the BCM50 power supply.
5. Repeat steps 1 to 4 for each BCM50 unit.
6. Plug the other end of the power-supply cable into the ac power source (wall outlet).

   The BCM50 system boots.

Note: To use the Startup Profile for initial configuration of the BCM50 system, save the Startup Profile on your USB storage device, and insert the USB storage device in the USB port of the main unit before connecting the power. See To download the Startup Profile template on page 38.

Warning: Leakage currents

You must reconnect the power cords to a grounded outlet before connecting the telephony and data networking cables.

Telephony connector

For more information, see the chapter "Connecting the cables to the BCM50 system" in the *Installation and Maintenance Guide*.

Note: You can use the wiring-field card (WFC) or rack-mount patch panel to simplify the connections of the telephony connector to the BCM50. For more information, see the *Installation and Maintenance Guide*.

You can connect 4 analog telephone lines (standard main units only), 4 analog telephony devices, and 12 digital telephones to the RJ-21 telephony connector. The four analog lines on the RJ-21 telephony connector are not available on the BRI main units.

The table RJ-21 telephony connector wiring on page 27 lists the wiring details for the RJ-21 telephony connector.

Table 12 RJ-21 telephony connector wiring (Sheet 1 of 2)

Device	Pin	Connection	Wire color	Type of device	Port	Default DN	Default line number
1	26	Tip	White-Blue	**Analog line**	—	—	**061**
	1	Ring	Blue-White				
2	27	Tip	White-Orange	**Analog line**	—	—	**062**
	2	Ring	Orange-White				
3	28	Tip	White-Green	**Analog line**	—	—	**063**
	3	Ring	Green-White				
4	29	Tip	White-Brown	**Analog line**	—	—	**064**
	4	Ring	Brown-White				
Note: The four analog lines are only available on the standard main units; they are not available on the BRI series (b-series) main units, which have two BRI ports instead.							
5	30	Tip	White-Slate	**Analog telephone**	**413**	**233**	—
	5	Ring	Slate-White				
6	31	Tip	Red-Blue	**Analog telephone**	**414**	**234**	—
	6	Ring	Blue-Red				
7	32	Tip	Red-Orange	**Analog telephone**	**415**	**235**	—
	7	Ring	Orange-Red				
8	33	Tip	Red-Green	**Analog telephone**	**416**	**236**	—
	8	Ring	Green-Red				
9	34	No connection	Red-Brown	**No connection**	—	—	—
	9	No connection	Brown-Red				
10	35	Tip	Red-Slate	**Auxiliary Ringer**	—	—	—
	10	Ring	Slate-Red				
11	36	Tip	Black-Blue	**Page Relay**	—	—	—
	11	Ring	Blue-Black				
12	37	Tip	Black-Orange	**Page Output**	—	—	—
	12	Ring	Orange-Black				
13	38	Tip	Black-Green	**Music Source**	—	—	—
	13	Ring	Green-Black				
14	39	Tip	Black-Brown	**Digital telephone**	**412**	**232**	—
	14	Ring	Brown-Black				
15	40	Tip	Black-Slate	**Digital telephone**	**411**	**231**	—
	15	Ring	Slate-Black				
16	41	Tip	Yellow-Blue	**Digital telephone**	**410**	**230**	—
	16	Ring	Blue-Yellow				

Table 12 RJ-21 telephony connector wiring (Sheet 2 of 2)

Device	Pin	Connection	Wire color	Type of device	Port	Default DN	Default line number
17	42	Tip	Yellow-Orange	**Digital telephone**	**409**	**229**	—
	17	Ring	Orange-Yellow				
18	43	Tip	Yellow-Green	**Digital telephone**	**408**	**228**	—
	18	Ring	Green-Yellow				
19	44	Tip	Yellow-Brown	**Digital telephone**	**407**	**227**	—
	19	Ring	Brown-Yellow				
20	45	Tip	Yellow-Slate	**Digital telephone**	**406**	**226**	—
	20	Ring	Slate-Yellow				
21	46	Tip	Violet-Blue	**Digital telephone**	**405**	**225**	—
	21	Ring	Blue-Violet				
22	47	Tip	Violet-Orange	**Digital telephone**	**404**	**224**	—
	22	Ring	Orange-Violet				
23	48	Tip	Violet-Green	**Digital telephone**	**403**	**223**	—
	23	Ring	Green-Violet				
24	49	Tip	Violet-Brown	**Digital telephone**	**402**	**222**	—
	24	Ring	Brown-Violet				
25	50	Tip	Violet-Slate	**Digital telephone**	**401**	**221**	—
	25	Ring	Slate-Violet				

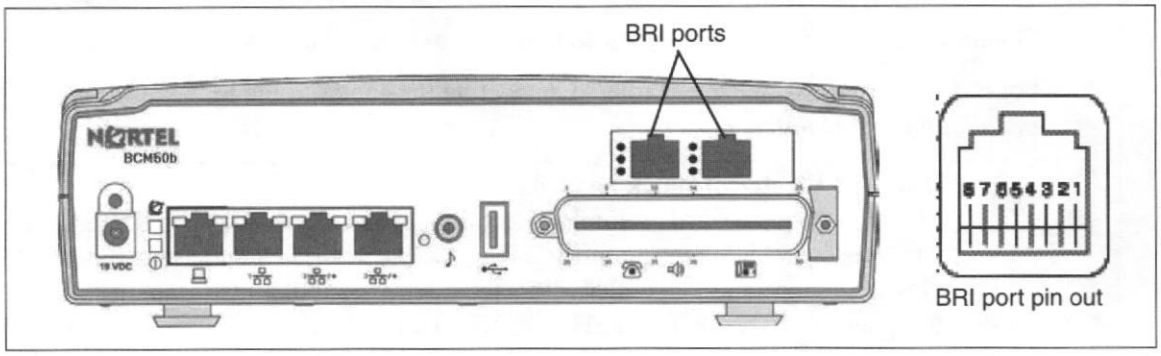
BRI integrated ports (BCM50b, BCM50ba, and BCM50be)

The digital BRI ISDN lines are connected to the BCM50b, BCM50ba, and BCM50be main units through the BRI ports (RJ-45) on the front of the main units. See the figure BRI ports and pin out (BCM50b shown) on page 29.

The figure BRI ports and pin out (BCM50b shown) on page 29, the table BRI port wiring on page 29, and the table BRI line numbering on page 29 apply to S-Loop and T-Loop connections. S-Loop are used to connect S-Loop devices such as video phones, terminal adapters, and Grp 3 Fax machines. The T-Loops are used to connect to the CO/PSTN.

Warning: For a U-loop connection, the BRI port must be connected only to an NT1 provided by the service provider. The NT1 must provide a Telecommunication Network Voltage (TNV) to Safety Extra Low Voltage (SELV) barrier.

Figure 8 BRI ports and pin out (BCM50b shown)



The table BRI port wiring on page 29 and the table BRI line numbering on page 29 list the wiring details for the RJ-45 ports.

Table 13 BRI port wiring

Pin	Signal	Signal on system side
1	No connection	No connection
2	No connection	No connection
3	+ Receive (+Rx)	+Tx
4	+ Transmit (+Tx)	+Rx
5	–Transmit (-Tx)	–Rx
6	–Receive (-Rx)	–Tx
7	No connection	No connection
8	No connection	No connection

Table 14 BRI line numbering

Port number	Default line numbers on Expansion port 1	Default line numbers on Expansion port 2
1	065–066	095–096
2	067–068	097–098
3	069–070	099–100
4	071–072	101–102

MBM wiring

15 minutes

Telephone lines connect to the expansion unit through the connectors on the MBM.

For more information, see the chapter "Connecting the cables to the BCM50 system" in the *Installation and Maintenance Guide*.

Danger: Electrical shock hazards
Electrical shock hazards from the telecommunications network and ac mains are possible with this equipment. To minimize risk to service personnel and users, the BCM50 system must be connected to an outlet with a third-wire ground. In addition, install blank faceplates in all unused slots. The covers on all units must be in place at the completion of any servicing.

Warning: Electrical shock warning
The MBMs were safety approved for installation into the expansion unit. The installer and user are responsible for ensuring that installation of the hardware does not compromise existing safety approvals.

BEFORE YOU OPEN the main unit or expansion unit, unplug the network telecommunication cables and disconnect the unit from the ac power source.

Station modules: Connect the ports on these modules only to approved digital telephones and peripherals with the proper cables on a protected internal wiring system.

Do not connect any telephones to wiring that runs outside the building.

Read and follow the installation instructions carefully.

Warning: Use only qualified persons to service the system.
The installation and service of this unit must be performed by service personnel with the appropriate training and experience. Service personnel must be aware of the hazards of working with telephony equipment and wiring. They must be experienced in techniques that minimize any danger of shock or equipment damage.

Leakage currents
Service personnel must be alert to the possibility of high leakage currents becoming available on metal system surfaces during power-line fault events on network lines. These leakage currents normally flow safely to protective earth ground through the power cord. However, if the ac power is unplugged prior to disconnecting the cables from the BCM50 units, this hazard can occur.

System shutdown: You must disconnect the telephony and data networking cables from the system before disconnecting the power cord from a grounded outlet.

System startup: You must reconnect the power cords to a grounded outlet before reconnecting the telephony and data-networking cables.

To connect telephone lines to DTM, BRIM, or 4x16 MBMs

1 Obtain a telephone cable with a modular plug that matches the MBM to which you are connecting:

- RJ-48C—for DTM
- RJ-45—for BRIM
- RJ-11—for 4x16

2 Plug the modular cable into the jack in the front of the MBM.

3 Connect the other end of the cable to the telephone company demarcation blocks of the building.

4 To connect telephone lines to another MBM, repeat steps 1 to 3 to for each additional line.

Warning: If the network ISDN is a U-loop, the BRIM must be connected only to an NT1 provided by the service provider. The NT1 must provide a Telecommunication Network Voltage (TNV) to Safety Extra Low Voltage (SELV) barrier.

Note: Do not attempt to plug digital equipment into the auxiliary (AUX) jacks on the front of 4x16 MBM.

5 Select the appropriate option for your system:

- If your system includes a 4x16 MBM, go to Connect extensions to the expansion unit on page 32 for instruction about wiring the extensions for this MBM.

- If your system includes another expansion unit, repeat this procedure to add more telephone lines or proceed to Connect extensions to the expansion unit on page 32 to add extensions.

To connect analog telephone lines to the GATM4, GATM8, G4x16, or G8x16

1. Obtain a 25-pair cable with an RJ-21 connector on one end.
2. Plug the RJ-21 connector of the cable into the RJ-21 connector on the front of the MBM.

   Use the lower RJ-21 connector on the G4x16 and G8x16 MBMs to connect analog lines.
3. Select the appropriate option to secure the RJ-21 connector to the MBM:
   - With a straight RJ-21 connector, use the two supplied screws on the sides of the connector to secure it.
   - With a right-angle RJ-21 connector, use the supplied screw on the left side of the connector to secure the left side of the connector. To secure the right side of the connector, use the supplied cable tie to fasten the 25-pair cable to the anchor on the MBM.
4. Connect the other end of the cable to the telephone company demarcation blocks of the building.

Connect extensions to the expansion unit

Extensions connect to the expansion unit through the connectors on the MBM installed in the expansion unit.

To connect extensions to DSM16, DSM32, ASM8, 4x16, G4x16, or G8x16 MBMs

1. Obtain a 25-pair cable with an RJ-21 connector on one end.
2. Plug the RJ-21 connector of the cable into the RJ-21 connector on the front of the MBM.

   Use the upper RJ-21 connector on the G4x16 and G8x16 MBMs to connect digital extensions.
3. Select the appropriate option to secure the RJ-21 connector to the MBM:
   - With a straight RJ-21 connector, use the two supplied screws on the sides of the connector to secure it.
   - With a right-angle RJ-21 connector, use the supplied screw on the left side of the connector to secure the left side of the connector. To secure the right side of the connector, use the supplied cable tie to fasten the 25-pair cable to the anchor on the MBM.
4. Connect the other end of the cable to the local connecting blocks.
5. To connect extensions to a DSM32, repeat steps 1 to 4 for the second RJ-21 connector.

BCM50 main unit LAN connection

For more information, see the chapter "Connecting the BCM50 system to the LAN and WAN" in the *Installation and Maintenance Guide*.

Warning: The DHCP server on the main unit is enabled (IP Phones only) by default. If your network already contains a DHCP server, then disable the DHCP server on the main unit.

To connect a BCM50 system to the LAN

5 minutes

1 Connect one end of a standard Ethernet cable to your LAN.

2 Plug the other end of the Ethernet cable into the LAN port on the BCM50 main unit.

3 If you want to use the internal BCM50 network switch to connect another IP device to the LAN, connect an Ethernet cable between the IP device and one of the additional LAN ports on the BCM50 system (Router card LAN ports, Expansion port, or expansion unit LAN port).

4 Repeat step 3 for each IP device you want to connect to the LAN using the BCM50 switch.

If you cannot connect your BCM50 system to the LAN, you can access the system by connecting through the OAM port. See To connect to the system using the OAM port on page 37.

DHCP server configuration and IP address

If the main unit has an integrated router, you can activate either the DHCP server on the main unit or the DHCP server on the integrated router through Element Manager (Configuration > Data Services > DHCP Server > General Settings tab). If you want to use the DHCP server on the main unit, you must first disable the DHCP server on the integrated router.

The BCM50 system can have a main unit with or without an integrated router:

- BCM50 and BCM50b main units (no integrated router) on page 33
- BCM50a, BCM50e, BCM50ba, or BCM50be main unit (with integrated router) on page 34

For more information, see the chapter "Determining DHCP server configuration and IP address" in the *Installation and Maintenance Guide*.

BCM50 and BCM50b main units (no integrated router)

By default, the main unit is configured with a dynamic IP address, which means the unit requests an IP configuration from a DHCP server.

The BCM50 and BCM50b main units can have two DHCP server configurations:

- If an external DHCP server is not present on page 34
- If an external DHCP server is present on page 34

If an external DHCP server is not present

If an external DHCP server is not present, then the main unit uses the following default IP configuration:

IP address:	192.168.1.2
Subnet mask:	255.255.255.0
Gateway:	192.168.1.1

The DHCP server on the main unit supplies IP configuration information for all IP devices (PCs and IP Phones). It also supplies specific connection information to the IP Phones.

If an external DHCP server is present

Warning: The DHCP server on the main unit is enabled by default. If your network already contains a DHCP server, then disable the DHCP server on the main unit.

If an external DHCP is present, then the BCM50 system uses the IP configuration supplied by the external DHCP server.

In this case, the DHCP server on the main unit supplies only IP Phones with IP configuration information. It does not supply any other devices with IP settings. This means that the administrator does not need to set up the external DHCP server to supply configuration settings to the IP Phones.

The DHCP server on the main unit must configure a range of IP addresses to supply to the IP Phones. It uses the top 20 percent of a subnet.

For example:

If the external DHCP server supplies the IP address 177.218.21.45 (subnet mask is 255.255.255.0) to the BCM50, then the BCM50 DHCP server reserves the range 177.218.21.200–177.218.21.254.

You can use Element Manager to verify and change this default range.

The administrator must ensure that this range agrees with the network configuration. The range is not used by the external DHCP server.

BCM50a, BCM50e, BCM50ba, or BCM50be main unit (with integrated router)

You can select the DHCP server option to use with the BCM50 integrated router main units. You can select to use the integrated router or you can disable the integrated router and use the DHCP server that is on the main unit. Select the DHCP server option through Element Manager (Configuration > Data Services > DHCP Server > General Settings tab).

If you select the standard DHCP server on the main unit, you must first disable the DHCP server on the integrated router. You can then configure the DHCP server functionality in the same way as a non-router version.

If you select the DHCP server on the integrated router you can configure the router using the router WebGUI tool.

By default, the integrated router LAN IP address is 192.168.1.1, and the IP address assigned to the BCM50 system is the first IP address in the DHCP pool. If the DHCP pool starts at 192.168.1.190, then the BCM50 is 192.168.1.190 even though the router is 192.168.1.1. Therefore, the BCM50 system receives the IP address 192.168.1.2 (subnet mask is 255.255.255.0) from the DHCP server on the integrated router.

For more information about how to disable the DHCP server and select a DHCP server, see DHCP server configuration on page 43.

WAN connection

Four types of BCM50 main units—the BCM50e and BCM50be (with Ethernet router) and the BCM50a and BCM50ba (with ADSL router)—contain a router card. On the BCM50e and BCM50be, the WAN port is an RJ-45 port. On the BCM50a and BCM50ba, the WAN port is an RJ-11 port.

Refer to the following sections for information about connecting the BCM50 to the WAN:

- To connect the BCM50a or BCM50ba to the WAN on page 35
- To connect the BCM50e or BCM50be to the WAN on page 36

For more information, see the chapter "Connecting the BCM50 system to the LAN and WAN" in the *Installation and Maintenance Guide*.

To connect the BCM50a or BCM50ba to the WAN

2 minutes

1 Use the Integrated Router Web GUI to configure the router card on the BCM50a or BCM50ba main units. For more information about how to configure the router, see the *BCM50a Integrated Router Configuration Guide*.

2 Make sure the power supply is connected to the BCM50a or BCM50ba main units and to the AC power source (wall outlet).

Warning: Do not plug the WAN cable into the system unless the power supply is connected to the main unit and an AC power source with a third-wire ground.

3 Connect one end of a standard telephone cable to the ADSL telephone line provided by your ISP.

4 Plug the other end of the telephone cable into the WAN port.

Note: To use the ADSL line for both ADSL and regular voice communication, you must install a splitter filter, which is provided by your service provider.

To connect the BCM50e or BCM50be to the WAN

2 minutes

1 Use the Integrated Router Web GUI to configure the router card on the BCM50e or BCM50be main units. For more information about how to configure the router, see the *BCM50e Integrated Router Configuration Guide*.

2 Connect one end of a standard Ethernet cable to your WAN edge device (for example, an external ADSL modem or cable modem).

Refer to the documentation for you WAN edge device for proper setup and configuration of the device.

3 Plug the other end of the Ethernet cable into the WAN port.

Telephone installation

The BCM50 system supports many types of telephony devices (telephones). For more information about the supported telephones, see the *Telephony Device Installation Guide* (NN40020-309).

For more information about installing telephones, see the chapter "Installing telephones and peripherals" in the *Installation and Maintenance Guide*.

To install telephones

9 minutes/telephone

1 Open the box for each telephone, and verify that you have the following components:

- telephone set
- power supply and power-supply cable
- telephone cable
- installation instructions

2 Visually inspect the components for any damage.

3 Install the telephones as shown in the included installation instructions.

4 Label the telephone with customer-supplied information. Note the location, wall-jack identifier, and phone number for punch downs and BCM50 software commissioning.

Chapter 4
System configuration

The initial configuration defines your BCM50 system to the network. It also gives the system a unique identity and initial parameters. Then you can continue with the specific configurations for your system.

This chapter provides information on the following topics:

- Connect to the system on page 37
- BCM Web page downloads on page 38
- Software keycode on page 39
- System parameters on page 39
- DHCP server configuration on page 43
- MBM configuration on page 44
- Additional parameters on page 45

For more information about installing the BCM50 system (such as wiring charts and cable diagrams), see the *Installation and Maintenance Guide*.

Connect to the system

If you can use the default IP address, you can connect the BCM50 system to the LAN. Then you can configure the BCM50 system, through Element Manager, from any PC connected to the LAN.

If you can connect through a LAN connection, proceed to BCM Web page downloads on page 38.

Warning: Before using the default address on your network, check with your system administrator. If this address conflicts with the LAN settings, you can cause network damage if you connect to the network without changing the IP address.

If you must change the IP address (due to a conflict with your network), you can connect to the BCM50 through the OAM port. See To connect to the system using the OAM port on page 37.

For more information, see the chapter "Configuring the BCM50 system" in the *Installation and Maintenance Guide*.

To connect to the system using the OAM port

1 Connect one end of the Ethernet cable to the OAM port on the main unit.

2 Connect the other end of the Ethernet cable to the Ethernet port on your computer.

The DHCP-enabled computer is assigned IP address **10.10.11.2. (255.255.255.252).**

BCM Web page downloads

After you connect your computer to the BCM50 system, either through the OAM port or through a LAN connection, download Element Manager from the Administrator Applications area of the BCM Web page.

You can use the latest Element Manager version (for BCM50 Release 2) to manage all previous BCM systems that require Element Manager (BCM50 Release 1 and BCM 4.0). You need only one instance of Element Manager on your computer.

For more information, see the chapter "Configuring the BCM50 system" in the *Installation and Maintenance Guide*.

To access the BCM Web page

2 minutes

1 Open a Web browser and enter the BCM50 system IP address (default is 10.10.10.1).

The Enter Network Password dialog box appears.

2 Enter the username and password. Defaults are:

Username: **nnadmin**

Password: **PlsChgMe!**

3 Click **OK**.

The Welcome to BCM Web page appears.

To download and install Element Manager

15 minutes

1 Access the BCM Web page. See To access the BCM Web page on page 38.

2 On the **Welcome to BCM** Web page, click **Administrator Applications**.

The Administrator Applications page appears.

3 On the **Administrator Applications** page, click **Business Element Manager**.

The Element Manager panel appears.

4 Read the information on this panel.

5 Click **Download Element Manager** on the right side of the screen, and follow the instructions to download.

6 After you download Element Manager, double-click the application and follow the installation instructions.

To download the Startup Profile template

1 minute

1 Access the BCM Web page. See To access the BCM Web page on page 38.

2 On the **Welcome to BCM** Web page, click **Administrator Applications**.

The Administrator Applications page appears.

3 On the **Administrator Applications** page, click **Startup Profile template**.

The Startup Profile template panel appears.

4 Read the information on this panel.

5 Click **Download Startup Profile template** on the right side of the screen, and follow the instructions to download.

Software keycode

You require a keycode to enable software features on your BCM50 system. You receive only one keycode whether you purchase one feature or a bundle of features. You can load a keycode using Element Manager, Startup Profile, or Telset Administration.

To generate a keycode, you require an authorization code for each feature you purchase.

For example, if you require one feature, you receive one authorization code and you generate one keycode. If you purchase four features, you receive four authorization codes, but you generate only one keycode.

To generate a keycode through the Nortel Keycode Retrieval System (KRS), you require:

- Username and password for the KRS (**http://www.nortel.com/servsup/krs**)
- BCM50 authorization code for each feature
- BCM50 system ID

For more information about keycodes, see the *Keycode Installation Guide*.

System parameters

This section provides information about configuring the basic BCM50 system parameters (see the table BCM50 system parameters on page 39). You can configure the basic parameters using the Startup Profile template or Element Manager. After configuring the basic parameters, you can use Element Manager to configure more advanced parameters.

For more information, see the chapter "Configuring the BCM50 system" in the *Installation and Maintenance Guide*.

Table 15 BCM50 system parameters (Sheet 1 of 3)

Parameters	Element Manager	Startup Profile	Telset Administration
Keycode	Configuration > System > Keycodes	Keycode	Feature 9*8 > Feature codes
IP address: • Obtain dynamically • IP address • IP subnet mask • Default gateway	Configuration > System > IP Subsystem	IP Address	Feature 9*8 > IP Address

Table 15 BCM50 system parameters (Sheet 2 of 3)

Parameters	Element Manager	Startup Profile	Telset Administration
Modem: • Enable/disable modem	Configuration > Resources > Dial Up Interfaces	Modem	Feature 9*8 > Modem
System: • Region	Administration > Utilities > Reset > Cold Reset Telephony Services	System	Feature **PROFILE
Telephony startup: • Template • Start DN	Administration > Utilities > Reset > Cold Reset Telephony Services	Telephony Startup	Feature **STARTUP
Voice mail: • Attendant DN • UI style • Language • Auto Attendant • From Line • To Line • Number of rings	Configuration > Applications > Voice Messaging/Contact Center	Voice Mail Startup	Feature 983
User account: • Telset user ID (numeric) • Telset password (numeric)	Configuration > Administrator Access > Accounts and Privileges > View by Accounts tab	UserAccount	Feature 9*8 > User Accounts
System: • System name	Configuration > System > Identification	System	N/A
System: • System ID	Configuration > System > Keycodes (View ID - it is set automatically and cannot be changed)	System	N/A
Time: • Date and Time source • NTP server address • Date and time • Time zone	Configuration > System > Date and Time	Time	N/A
DHCP server: • Use DHCP Server on Integrated Router • Enable/disable server • IP domain name • Primary DNS • Secondary DNS • Default gateway	Configuration > Data Services > DHCP Server > General Settings tab	DHCP Server	N/A

Table 15 BCM50 system parameters (Sheet 3 of 3)

Parameters	Element Manager	Startup Profile	Telset Administration
IP Phones: • Enable registration • Enable global pwd • Global pwd • Auto-assign DNs • Advertisement logo	Configuration > Resources > Telephony Resources	IP Telephones	N/A
SNMP Agent: • Enable/disable SNMP agent • Minimum security • SNMP version support	Configuration > Administrator Access > SNMP > General tab	SNMP Agent	N/A
SNMP community: • Community string • Type of access	Configuration > Administrator Access > SNMP > Community Strings tab	SNMP Community	N/A
SNMP manager: • Manager IP address	Configuration > Administrator Access > SNMP > General tab	SNMP Manager	N/A
User account: • User ID • Group • Description • Callback number	Configuration > Administrator Access > Accounts and Privileges > View by Accounts tab	User Account	N/A

To configure the system using Element Manager

15 minutes

1 Open Element Manager.

2 From the Network menu, select **New Network Element**, and then select **Business Communications Manager**.

3 Enter the BCM50 system IP address in the dialog box (default is 10.10.10.1).

4 Click **Ok**.

5 Select the BCM50 system IP address from the Network Elements folder.

6 Enter the following username and password:

Username: **nnadmin**

Password: **PlsChgMe!**

7 Click **Connect**.

Element Manager connects to the BCM50 system.

8 Configure the required parameters. See the table BCM50 system parameters on page 39.

For more information about configuring the system, see the online Help within Element Manager.

To configure the system using the Startup Profile (optional)

15 minutes

Note: The Startup Profile template uses macros to perform certain functions. You must set your Excel macro security level to medium or low to enable the macros:

- From the Tools menu, select **Macros** and then select **Security.**
- Select **Medium** or **Low**.
- Exit from Excel.
- Open the Startup Profile template (in Excel).
- Enable macros if prompted.

1 On a computer with a USB port and Microsoft Excel, open the Startup Profile template.

If you do not have a copy of the Startup Profile template, see To download the Startup Profile template on page 38.

2 Refer to the **Usage Instructions** tab for instructions about using the Startup Profile template.

3 Click the **StartupProfileTemplate** tab to begin entering information in the Startup Profile template.

4 In the Startup Profile template, enter your BCM50 system ID in the System ID field.

The system ID is on the box of the main unit and on the main unit itself. If you enter the wrong system ID, the Startup Profile does not function with your system.

5 Click the large button at the top of the Startup Profile template to save a version of the Startup Profile (.sps file) and a version of the Startup Profile editor (Excel spreadsheet) on your computer.

The filenames for the Startup Profile editor and the Startup Profile consist of the system ID followed by the appropriate extension.

Note: Never edit the Startup Profile (.sps file) directly; always use the Startup Profile editor to make changes.

6 In the Startup Profile editor, enter the remaining information that you want loaded onto the BCM50 system.

The Startup Profile editor contains explanations of the various parameters. Click the cell where you want to enter information, and the Help text appears.

You can specify which parameters to load onto your system by selecting **Apply** for the parameters you want to load. If you do not want to load certain parameters, select **Ignore**.

7 After you enter all the information, click the large button at the top of the Startup Profile template to save a version of the Startup Profile (.sps file) and a version of the Startup Profile editor (Excel spreadsheet) on your computer.

8 Exit from Microsoft Excel.

9 Insert the USB storage device into the USB port of the computer.

10 Copy the Startup Profile (.sps file) to the root directory of the USB storage device.

11 If you want to load your keycode using the Startup Profile, copy the keycode file to the root directory of the USB storage device.

The name of the keycode file on the USB storage device must exactly match the filename you entered in the Startup Profile editor.

12 Remove the USB storage device from the USB port of the computer.

The Startup Profile is now stored on the USB storage device.

13 Insert the USB storage device into the USB port of the BCM50 main unit before you power up the system.

Warning: Do not use the Startup Profile on a functional BCM50 system because the parameter values in the Startup Profile replace those on the system.

For more information about the Startup Profile, see the *Installation and Maintenance Guide*.

DHCP server configuration

Use the following procedure to configure DHCP server settings for your system.

To configure DHCP server settings

5 minutes

Warning: If you have a main unit with an integrated router, you must first disable the DHCP server on the integrated router to use the DHCP server on the main unit.

1 From the **Configuration** tab, click the **Data Services** folder to expand it.

2 Select **DHCP Server**.

3 Select the **General Settings** tab.

4 If you have a main unit with an integrated router (BCM50a, BCM50e, BCM50ba, BCM50be), do one of the following:

- Select the **Use DHCP Server on Integrated Router** check box to use the DHCP server on the integrated router. The DHCP server on the main unit will be disabled.

  Click **Launch Router WebGUI tool** to launch the router configuration tool.

  For information about using the router WebGUI tool, see the *Integrated Router Configuration Guide* for your product.

- Clear the **Use DHCP Server on Integrated Router** check box to use the DHCP server on the main unit. You must first disable the DHCP server on the integrated router using the router WebGUI tool.

For information about using the router WebGUI tool, see the *Integrated Router Configuration Guide* for your product.

5 Configure the attributes for your system.

MBM configuration

You must configure the MBMs to function with your BCM50 system.

For more information, see the chapter "Completing the initial installation (optional)" in the *Installation and Maintenance Guide*.

To configure the MBMs

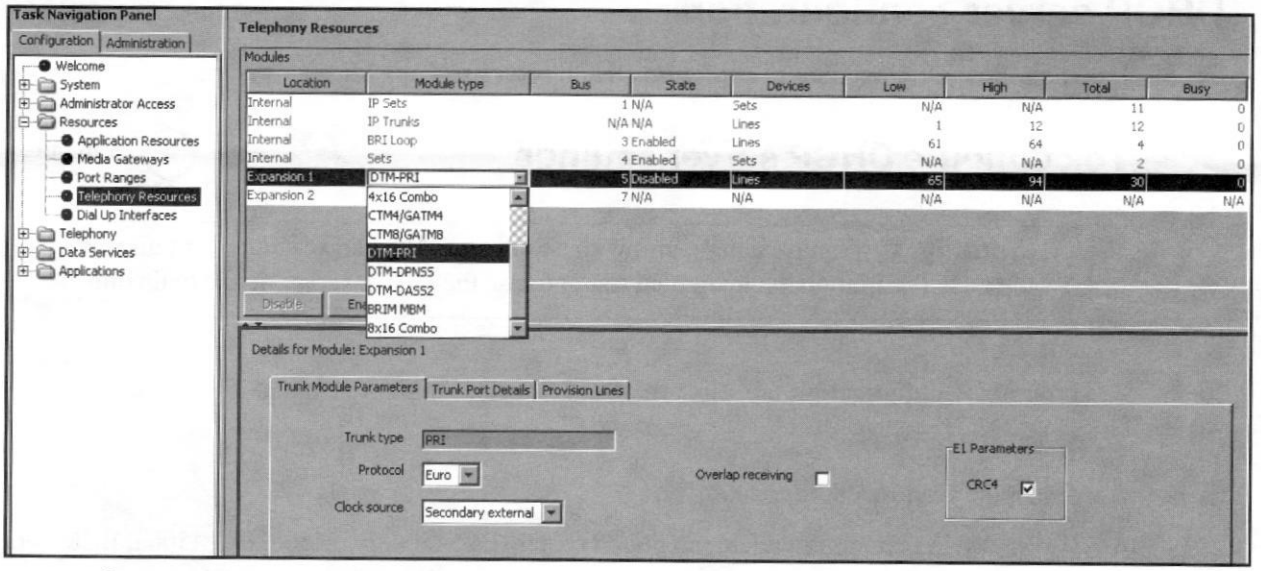
1 minute/MBM

1 Open Element Manager and connect to your BCM50 system.

2 From the **Configuration** tab, click the **Resources** folder to expand it.

3 Select **Telephony Resources** from the Resources folder. See the figure Telephony Resources page on page 44.

Figure 9 Telephony Resources page



4 From the **Modules** section, select the expansion unit that you want to configure.

Keycodes are required for the expansion ports to function. If you purchase a keycode for one expansion port only, the expansion port on the left (port 2) is active. Therefore, Expansion 1 must be connected to the active port (port 2).

5 In the **Modules** section, select the row of the MBM that you want to configure.

6 Double-click the **Module type** field to display the list of MBM types.

7 Select the type of MBM that you installed in the expansion unit.

8 Click **Enable**.

9 If you installed a second expansion unit, repeat steps 4 to 7 to enable the second MBM.

You can set other parameters for the MBMs depending on the type of MBM you installed.

Additional parameters

You can also customize the following parameters:

- Security policies (see the *Administration Guide*)
- Modem settings (see the *Networking Configuration Guide*)
- Software updates (see the *Administration Guide*)
- Voice mail (for information about using the Web-based interface to configure your voice mail system, see the *CallPilot Manager Set Up and Operation Guide;* or for information about using Telset Administration to configure your voice mail system, see the *CallPilot Telephone Administration Guide*)
- Backup and restore (see the *Administration Guide*)